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*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: FIELD ELECTRON EMISSION MATERIALS AND DEVICES

(57) Abstract: In a method of creating a field electron emission material, vanadium or a vanadium compound is disposed in respec-
tive locations of a substrate in order to create a plurality of emission site at said locations, at an average density of at least 10 cm^{-2} .
Preferably, the vanadium or vanadium compound is in the form of particles.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/50078

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01J1/304 H01J9/02 H01J17/06 H01J35/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	EP 1 065 692 A (CODIXX AG) 3 January 2001 (2001-01-03) paragraphs [0039],[0042],[0054]; figure 1	1
X,P	EP 1 246 219 A (ABB RESEARCH LTD) 2 October 2002 (2002-10-02) the whole document	1,2
A	US 6 097 139 A (LATHAM RODNEY VAUGHAN ET AL) 1 August 2000 (2000-08-01) cited in the application abstract; claims 1,23	1,2,31, 32
A	US 5 726 524 A (DEBE MARK K) 10 March 1998 (1998-03-10) abstract column 6, line 66 -column 7, line 12 column 11, line 64 -column 12, line 26	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.
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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-26, 29, 31-41, 43-57

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-26,29,31,32,33,34-41,43-57

Method of creating a field electron emission material comprising the step of disposing a material on a substrate in order to create a plurality of emission sites wherein the material is vanadium or a vanadium compound and the density of sites is at least 100/cm²

2. Claims: 27,28,29,31,34-41,43-57

Method of creating a field electron emission material comprising the step of disposing a material on a substrate in order to create a plurality of emission sites wherein the material is a metal oxide which is in a further step processed in such a way as to grow whiskers

INTERNATIONAL SEARCH REPORT

Information on patent family members

Original Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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